

Date: Monday, 1/8/2007 11:06:48 AM  
User: Kim Johnston

## Process Sheet

SPLIT-1

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : SUPPORT (412 AFT)  
Job Number : 30200  
Estimate Number : 11060  
P.O. Number : N/A Part Number : D28961  
This Issue : 1/8/2007 S.O. No. : N/A Drawing Number : D2896 REV A B MP 07/07/10  
Prsht Rev. : NC Project Number : N/A  
First Issue : N/A Type : MACHINED PARTS Drawing Revision : A B MP 07/07/10  
Previous Run : 29705 Material : N/A  
Due Date : 1/30/2007 Qty: 20 Um: Each  
Written By :  
Checked & Approved By :  
Comment : Est: B 02 11.26 Reformat; Added P/O; Added mask hole KJ

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0

PG

PURCHASING



Comment: PURCHASING

Issue P/O: 2830

C207101109

Description: D6104-011

Material: 17-4 PH SS (AMS 5643 OR AISI 630) as per Dwg D6104

Material release note required.

Blank size makes (2) D2896-1

(20)

2.0

D6104011

17-4 SS Roundbar 6.50"OD



Comment: Qty.: 1.0000 Each(s)/Unit Total: 20.0000 Each(s)

Support

Batch 30200 15 deducted MS 07/01/25

PTC

3.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive &amp; Inspect for Transit Damage

Ensure Material Release Note is attached

07/01/19

(15)

4.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



QC 6 BG-07.01.22 (15)

Comment: MORI SEIKI CNC LATHE LARGE

Turn blank for Haas as per Folio FA167

BG / MS 07/01/25 (15)

5.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

BG / MS 07/01/25 (15)



W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
07.01.21	3 <sup>+</sup>	Please insert a step for Level 6 Mat'l insp. spec control drawing D6104 also missing.	MB 07.01.22			MB 07.01.22	MB 07.01.22	
07.01.25	6	Change step 6.0 comment "Band Saw" for "HAAS"	MB 07.01.25			MB 07.01.25	MB 07.01.25	

Part No: D2896-1 PAR #: N/A Fault Category: Pass - CNE NCR: Yes No DQA: Yes Date: 07.07.16  
 QA: N/C Closed: Yes Date: 07.07.16

NCR: <u>30200</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07/02/23	# 6.0	Meas 23 had a alarm and caused the Ball mill to plunge in to the part. causing a 0.045" hole in the Dart Logo	MB E-man Prim D. SHEPHERD	WEED AND REMACHINE THE SURFACE AND GRINDING.	J.L 07/02/27	MB 07/02/27	MB 07/02/27	MB 07/02/27
07/02/29	6	- 1 part D2896-1 learned hole is .004 off with 1.764 bore, part moved on Fixture to parts w/ of tolerance no good on test fit 5 parts learned hole is off by 0.007 by 1.764 Bore	MB 07/06/25	- Scrap + no replace  Test fit with a set-up	J.L 07/02/29 07.06.08	MB 07/06/25	MB 07/06/25	MB 07.02.28
07/02/27	#6.0	1-part learned hole is off by 0.045" by 1.764 Bore.	MB 07/06/25	SCRAP + NO Replace	MB 07/06/25	MB 07/06/25	MB 07/06/25	MB 07.02.27

NOTE: Date &amp; initial all entries

7 Totals

07.06.08



Date: Monday, 1/8/2007 11:08:49 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SUPPORT (412 AFT)

Job Number: 30200

Part Number: D28961

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

HAAS1

HAAS CNC VERTICAL MACHINING #1



Comment: BAND SAW -> HAAS  
Machine as per Folio FA167  
Tumble & Deburr

EP/SL 07/02/29 P10

7.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

EP/SL 07/02/29

8.0

QC8

SECOND CHECK



Comment: SECOND CHECK

mk 07/06/25

9.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1  
Mask Ø0.625" hole prior to paint

10.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING  
Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

Prime inside per QSI 005 4.2  
Yellow epoxy ml 07/07/08

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT

207-09 23 supports

12.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: crustale

25 07-07-10

11 + 1 (paid)

23 parts

13.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

11 07-07-10

11 07-07-11

Completion



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 30200
<b>Description:</b> Support		<b>Part Number:</b> D2896-1
<b>Inspection Dwg:</b> D2896 Rev. A4		<b>Page 1 of 1</b>

Inspect dimensions highlighted on inspection sheet drawing D2896 Rev A4/DSK080 Rev A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				1	2	3	4		
<b>Lathe Section</b>									
A	3.480	3.485		3.485	3.485	3.485	3.485	36	07.10.24
B	3.990	4.010		4.001	3.995	3.995	3.995		
C	3.825	3.845		3.834	3.837	3.837	3.837		
D	0.718	0.738		.727	.727	.727	.727		
E	0.090	0.110		.102	.102	.102	.102		
F	3.705	3.725		3.716	3.717	3.717	3.717		
G	1.360	1.380		1.369	1.369	1.370	1.370		
H	1.250	1.260		1.259	1.256	1.256	1.256		
I	6.490	6.510		6.495	6.495	6.495	6.495		
J	0.022	0.042		.032	.032	.032	.032		
K	0.240	0.260		.250	.250	.250	.250		
L	0.107	0.127		.115	.115	.115	.115		
<b>HAAS Section</b>									
AA	2.152	2.172		2.162	2.162	2.162	2.162		
AB	2.340	2.360		2.357	2.351	2.349	2.350		
AC	3.550	3.560		3.554	3.554	3.552	3.551		
AD	3.770	3.790		3.777	3.771	3.770	3.779		
AE	0.065 x 0.315	0.085 x 0.335		0.075 x 0.325	0.075 x 0.325	0.075 x 0.325	0.075 x 0.325		
AF	1.42	1.48		1.458	1.448	1.448	1.450		
AG	0.833	0.853		0.843	.844	.843	.844		
AH	0.240	0.260		0.250	0.250	0.250	0.250		
AI	0.261	0.266	DT8707	0.261	.261	.261	.261		
AJ	0.189	0.194	DT8706	0.189	.190	.189	.189		
AK	1.990	2.010		2.000	1.996	2.000	2.000		
AL	0.625	0.630	DT8709	0.627	.628	.628	.628		
AM	101.75	105.75	DT8697	✓	✓	✓	✓		
AN	0.053	0.073		0.063	0.063	0.063	0.063		
AO	0.927	0.947		0.947	.947	.947	.947		
<b>Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.003"</b>									
<b>Accept/Reject</b>									

<b>Measured by:</b> <i>SL</i>	<b>Audited by:</b> <i>SL</i>
<b>Date:</b> 07/02/23	<b>Date:</b> 07/06/25

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	04.05.27	Dimension AE changed	KJ/RF	
C	06.11.22	Note added to HAAS section	KJ/JLM	<i>SL</i>



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	30200
<b>Description:</b> Support		<b>Part Number:</b>	D2896-1
<b>Inspection Dwg:</b> D2896 Rev. A4		Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2896 Rev A4/DSK080 Rev A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				1 5	2 6	3 7	4 8		
<b>Lathe Section</b>									
A	3.480	3.485		3.485	3.485	3.485	3.485	RG	07.01.21
B	3.990	4.010		3.995	3.995	3.995	3.995		
C	3.825	3.845		3.833	3.833	3.834	3.834		
D	0.718	0.738		.727	.727	.727	.727		
E	0.090	0.110		.103	.104	.104	.104		
F	3.705	3.725		3.717	3.717	3.717	3.717		
G	1.360	1.380		1.370	1.370	1.370	1.370		
H	1.250	1.260		1.254	1.256	1.256	1.256		
I	6.490	6.510		6.495	6.495	6.495	6.495		
J	0.022	0.042		.032	.032	.032	.032		
K	0.240	0.260		.250	.250	.250	.250		
L	0.107	0.127		.117	.117	.117	.117		
M									
<b>HAAS Section</b>									
AA	2.152	2.172		2.162	2.162	2.162	2.162		
AB	2.340	2.360		2.352	2.352	2.352	2.351		
AC	3.550	3.560		3.550	3.552	3.558	3.558		
AD	3.770	3.790		3.778	3.780	3.780	3.780		
AE	0.065 x 0.315	0.085 x 0.335		0.075 x 0.325	0.075 x 0.325	0.075 x 0.325	0.075 x 0.325		
AF	1.42	1.48		1.453	1.453	1.453	1.453		
AG	0.833	0.853		.847	.847	.847	.847		
AH	0.240	0.260		.250	.250	.250	.250		
AI	0.261	0.266	DT8707	.261	.261	.261	.261		
AJ	0.189	0.194	DT8706	.190	.189	.190	.190		
AK	1.990	2.010		1.996	1.996	1.998	1.998		
AL	0.625	0.630	DT8709	.628	.625	.629	.625		
AM	101.75	105.75	DT8697						
AN	0.053	0.073		.063	.063	.063	.063		
AO	0.927	0.947		.947	.947	.944	.944		
<b>Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.003"</b>									
<b>Accept/Reject</b>									

Measured by:	JL/En
Date:	07/02/26

Audited by:	Enl
Date:	07/06/25

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	04.05.27	Dimension AE changed	KJ/RF	
C	06.11.22	Note added to HAAS section	KJ/JLM	BE

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 30200
<b>Description:</b> Support		<b>Part Number:</b> D2896-1
<b>Inspection Dwg:</b> D2896 Rev. A4		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2896 Rev A4/DSK080 Rev A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				9	10	11	12		
<b>Lathe Section</b>									
A	3.480	3.485		3.485	3.485	3.485	3.485	BG/MS	20.01.24
B	3.990	4.010		3.995	3.995	3.995	3.995		
C	3.825	3.845		3.834	3.834	3.834	3.834		
D	0.718	0.738		.727	.727	.727	.727		
E	0.090	0.110		.102	.103	.103	.103		
F	3.705	3.725		3.717	3.717	3.717	3.715		
G	1.360	1.380		1.370	1.370	1.370	1.370		
H	1.250	1.260		1.256	1.256	1.256	1.256		
I	6.490	6.510		6.495	6.495	6.495	6.495		
J	0.022	0.042		.032	.032	.032	.032		
K	0.240	0.260		.250	.250	.250	.250		
L	0.107	0.127		.115	.115	.115	.115		
M									
<b>HAAS Section</b>									
AA	2.152	2.172		2.162	2.162	2.162	2.162		
AB	2.340	2.360		2.351	2.356	2.355	2.353		
AC	3.550	3.560		3.555	3.556	3.555	3.552		
AD	3.770	3.790		3.784	3.788	3.788	3.785		
AE	0.065 x 0.315	0.085 x 0.335		0.075 x 0.325	0.075 x 0.325	0.075 x 0.325	0.075 x 0.325		
AF	1.42	1.48		1.440	1.440	1.440	1.451		
AG	0.833	0.853		0.840	0.840	0.840	.847		
AH	0.240	0.260		0.250	0.250	0.250	0.250		
AI	0.261	0.266	DT8707	0.261	0.261	0.261	0.261		
AJ	0.189	0.194	DT8706	0.191	0.191	0.191	0.191		
AK	1.990	2.010		1.996	1.991	1.991	1.993		
AL	0.625	0.630	DT8709	0.625	0.627	0.628	.628		
AM	101.75	105.75	DT8697	✓	✓	✓	✓		
AN	0.053	0.073		0.063	0.063	0.063	0.063		
AO	0.927	0.947		0.944	0.947	0.947	.947		
<b>Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.003"</b>									
<b>Accept/Reject</b>									

Measured by: Ep / J.L	Audited by: [Signature]
Date: 07/02/28	Date: 07/06/25

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	04.05.27	Dimension AE changed	KJ/RF	
C	06.11.22	Note added to HAAS section	KJ/JLM	BE



<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 30200
<b>Description:</b> Support	<b>Part Number:</b> D2896-1
<b>Inspection Dwg:</b> D2896 Rev. A4	<b>Page 1 of 1</b>

Inspect dimensions highlighted on inspection sheet drawing D2896 Rev A4/DSK080 Rev A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions			By	Date
				13	14	15		
<b>Lathe Section</b>								
A	3.480	3.485		3.485	3.485	3.485	MS	07/01/25
B	3.990	4.010		3.995	3.995	3.995		
C	3.825	3.845		3.834	3.834	3.834		
D	0.718	0.738		.727	.725	.727		
E	0.090	0.110		.102	.103	.103		
F	3.705	3.725		3.717	3.717	3.717		
G	1.360	1.380		1.370	1.370	1.370		
H	1.250	1.260		1.256	1.256	1.256		
I	6.490	6.510		6.495	6.495	6.495		
J	0.022	0.042		.032	.032	.032		
K	0.240	0.260		.250	.250	.250		
L	0.107	0.127		.115	.115	.115		
M								
<b>HAAS Section</b>								
AA	2.152	2.172		2.162	2.162	2.162		
AB	2.340	2.360		2.353	2.351	2.353		
AC	3.550	3.560		3.553	3.550	3.551		
AD	3.770	3.790		3.782	3.780	3.782		
AE	0.065 x 0.315	0.085 x 0.335		.075x.325	.075x.325	.075x.325		
AF	1.42	1.48		1.451	1.455	1.454		
AG	0.833	0.853		.849	.840	.848		
AH	0.240	0.260		.250	.250	.250		
AI	0.261	0.266	DT8707	.264	.264	.264		
AJ	0.189	0.194	DT8706	.191	.191	.191		
AK	1.990	2.010		1.997	1.999	1.998		
AL	0.625	0.630	DT8709	.628	.628	.628		
AM	101.75	105.75	DT8697					
AN	0.053	0.073		.063	.063	.063		
AO	0.927	0.947		.947	.947	.947		
<b>Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.003"</b>								
<b>Accept/Reject</b>								

Measured by: JL
Date: 07/02/25

Audited by: [Signature]
Date: 07/06/25

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	04.05.27	Dimension AE changed	KJ/RF	
C	06.11.22	Note added to HAAS section	KJ/JLM	[Signature]



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	30200
<b>Description:</b> Support		<b>Part Number:</b>	D2896-1
<b>Inspection Dwg:</b> D2896 Rev. A4		Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2896 Rev A4/DSK080 Rev A and record below:

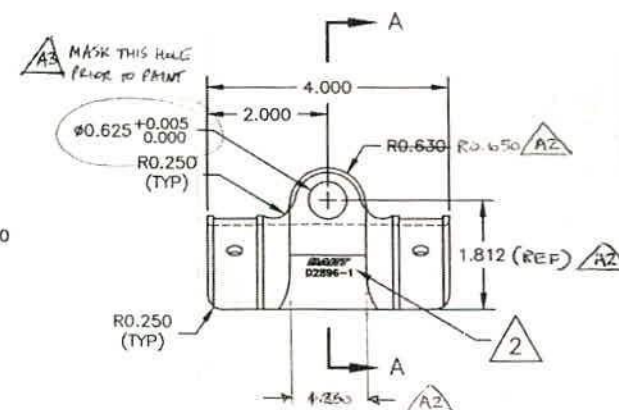
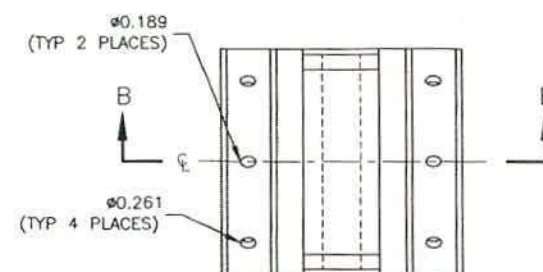
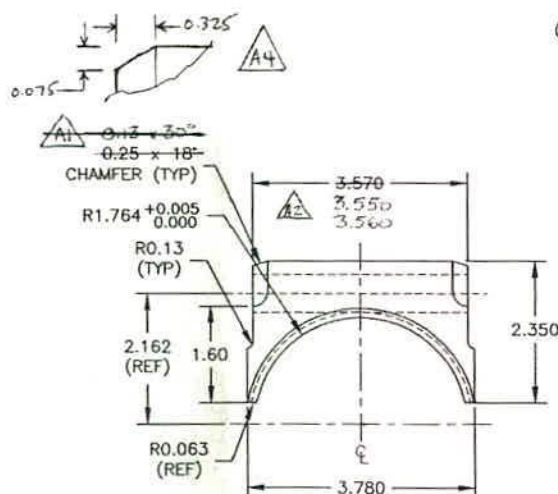
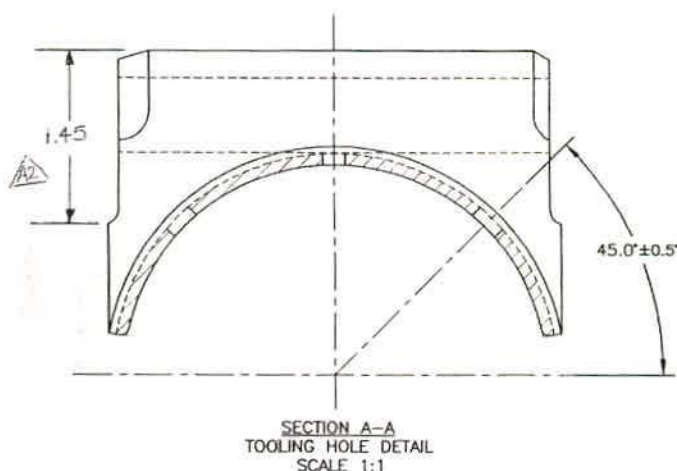
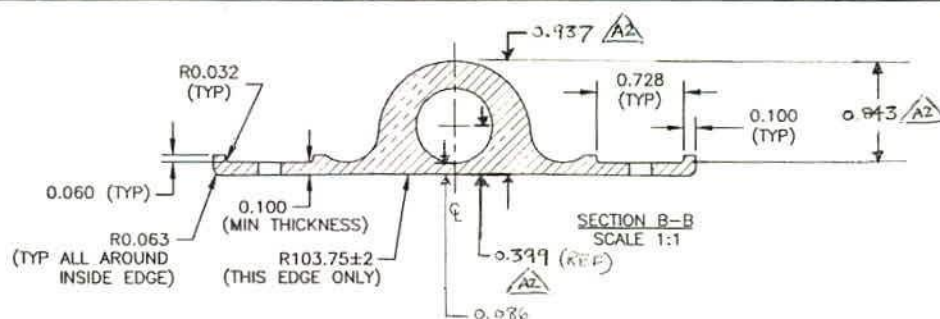
Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				1	2	3	4		
<b>Lathe Section</b>									
A	3.480	3.485							
B	3.990	4.010							
C	3.825	3.845							
D	0.718	0.738							
E	0.090	0.110							
F	3.705	3.725							
G	1.360	1.380							
H	1.250	1.260							
I	6.490	6.510							
J	0.022	0.042							
K	0.240	0.260							
L	0.107	0.127							
M									
<b>HAAS Section</b>									
AA	2.152	2.172							
AB	2.340	2.360							
AC	3.550	3.560							
AD	3.770	3.790							
AE	0.065 x 0.315	0.085 x 0.335							
AF	1.42	1.48							
AG	0.833	0.853							
AH	0.240	0.260							
AI	0.261	0.266	DT8707						
AJ	0.189	0.194	DT8706						
AK	1.990	2.010							
AL	0.625	0.630	DT8709						
AM	101.75	105.75	DT8697						
AN	0.053	0.073							
AO	0.927	0.947							
<b>Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.003"</b>									
<b>Accept/Reject</b>									

Measured by:	
Date:	

Audited by	
Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	04.05.27	Dimension AE changed	KJ/RF	
C	06.11.22	Note added to HAAS section	KJ/JLM	BE

RELEASED  
01-11-13



D2896-1

- 1) MATERIAL: 17-4 PH STAINLESS STEEL  
HEAT TREAT TO H900 CONDITION  
(900°F FOR 1 HR, AIR COOL)  
MIN UTS = 170 KSI (38 HRC)
- 2) IDENTIFY WITH DART LOGO AND PART NUMBER IN THIS AREA  
WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP
- 3) BREAK ALL UNMARKED SHARP EDGES 0.010 TO 0.020
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) FINISH: POWDER COAT WHITE (REF 4.3.5.2) PER DART QSI 005 4.3
- 6) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 7) ALL DIMENSIONS ARE IN INCHES

D2896-1

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THAT IT IS NOT TO BE USED FOR ANY PURPOSE  
OR COPIED OR COMMUNICATED TO ANY OTHER  
PERSON WITHOUT WRITTEN PERMISSION FROM  
DART AEROSPACE LTD.

A4	04.05.14	CORRECT CHAMFER	
A3	02.11.20	ADD MASKING NOTE	
A2	02.06.04	ADD DIMS, CHANGE RAD	
A1	01.11.13	CHANGED CHAMFER	
A	01.10.19	NEW ISSUE	
DESIGN	CP	DRAWN BY	CP
CHECKED	+	APPROVED	+
DATE	01.10.19	DRAWING NO.	D2896
		TITLE	SUPPORT
		REV. A	SHEET 1 OF 1
		SCALE	1:2

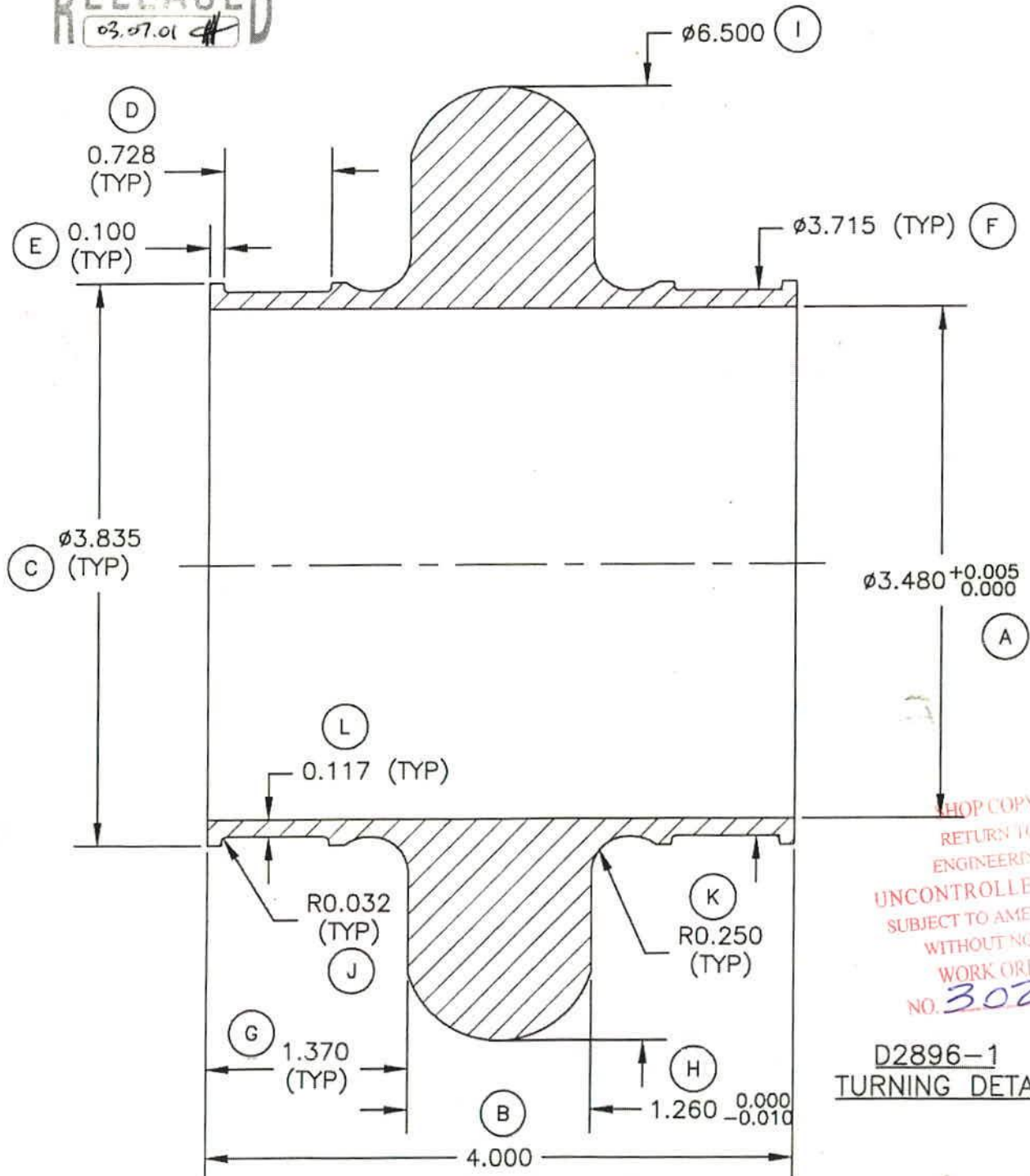
**DART** DART AEROSPACE LTD.  
HARTFORD, CONNECTICUT, USA

NO. 0200  
WORK ORDER  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
UNCONTROLLED COPY  
ENGINEERING  
RETURN TO  
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**DART**

DESIGN [Signature]	DRAWN BY [Signature]	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. DSK 080	REV. A SHEET 1 OF 1
DATE 03.05.20		TITLE TURNING DETAIL FOR D2896-1	SCALE 1:1
A	03.05.20	NEW ISSUE	

RELEASED  
03.07.01 [Signature]

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WORK ORDER  
NO. 30200

D2896-1  
TURNING DETAIL

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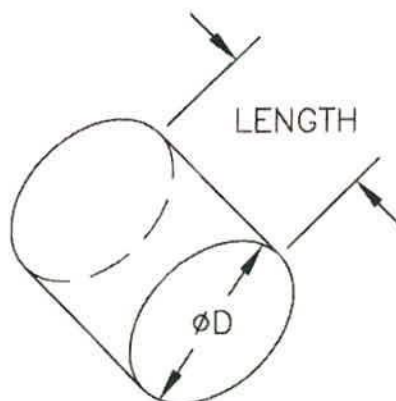


DESIGN FF	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29

## SPECIFICATION CONTROL DRAWING



MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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**VALBRUNA**

**SLATER STAINLESS, INC.**  
 2400 Taylor Street West, P.O. Box 630  
 Fort Wayne, Indiana USA 46801  
 Phone: 260-434-2892 Fax: 260-434-2905

**Product Certification Report****Report Number: 4245260**

Certified on Dec 19, 2006 Page 1 of 1

Order I.D. <b>0601898 001</b>		Order Date <b>6/15/06</b>		Commodity Code <b>15003</b>	
Dim 1 <b>6.5000</b>	Dim 2 <b>.0000</b>	Dim 3 <b>.0000</b>	Heat I.D. <b>243015</b>	Customer I.D. <b>001123</b>	Customer Purchase Order <b>01-19532</b>
Product Shape <b>Rounds</b>			Product Surface <b>HR &amp; Rough Turned</b>		
Length (Inches) <b>120.000 Min. 168.000 Max.</b>			Bill of Lading # <b>404559</b>	Weight	
			Customer Grade <b>17-4</b>		

**Ship To**

**CASTLE METALS**  
**3400 NORTH WOLF ROAD**  
**FRANKLIN PARK, IL 60131**

**Sold To**

**VALBRUNA STAINLESS, INC.**  
**2400 TAYLOR STREET WEST**  
**FORT WAYNE, IN 46802**

**Lifts: 0064 0069****AISI 630****UNS S17400****AMS 2303E****CONDITION A****ASTMA 564-04****AMS 5643Q**

3174-02 REV 23 DTD 11/15/01

ASMESA 564 01 ED 2002 ADD

**CHEMICAL ANALYSIS:**

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.040	.54	.023	.020	.36	15.58	4.67	.24	3.40	.03	.31	.001	.31

**HB****344****TENSILE PROPERTIES****CAPABILITY**

HB	TS (PSI)	.2%YS (PSI)	%EL(2")	%RA	AGE(F)
417	198900	188000	14.0	49.8	900

**MAGNETIC PARTICLE TEST****FREQ SEV****AVG .00 .00****MACRO ASTM E340/E381****MACRO****OK****OK****OK****CASTLE METALS FP****DATE REC'D 12.20.06 AC/5003****APPROVED BY: SW****PERCENT FERRITE****% FERRITE****AVG .5****Reduction ratio 5 To 1 Min.****Electric Furnace melted; AOD refined.****Ultrasonic test OK.****Chemical testing performed to one or several of the following ASTM methods: E415, E572, E1019, E1085, E1086.****No mercury or low melting alloy contamination. No weld repair.****Material melted in Italy, manufactured in the United States.****Material conforms to listed specifications.****Quality system is compliant with ISO 9001:2000. Produced in accordance with EN 10204 3.1B.**

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

  
 Dennis Hackett

**S Shahbazian**

---

**From:** David Shepherd [dshepherd@dartaero.com]  
**Sent:** February 26, 2007 6:47 PM  
**To:** 'S Shahbazian'  
**Cc:** 'L Lacelle'; 'Jason Murdoch'  
**Subject:** FW:  
**Attachments:** P1010022.JPG

Serge,

As we discussed at the Engr meeting this afternoon, it is acceptable to me to weld the tool mark/engraving in this part and grind flush.  
The part can be re-engraved if it will work out but if not, it is acceptable to me to leave the engraving off as long as we have it on the other side.

David

---

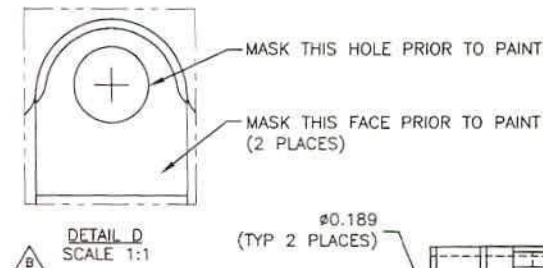
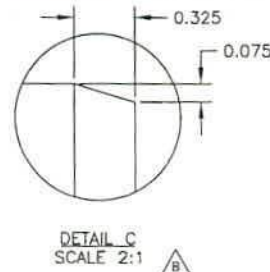
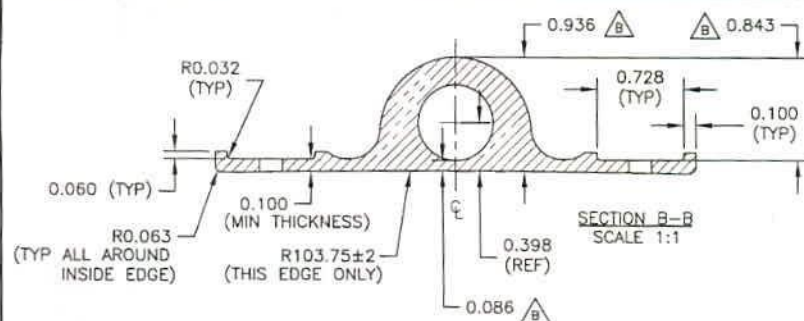
**From:** S Shahbazian [mailto:sshahbazian@dartaero.com]  
**Sent:** Monday, February 26, 2007 1:18 PM  
**To:** Shepherd, David  
**Subject:**

David,  
Look at the photo and we will talk during engineering meeting.

--  
No virus found in this incoming message.  
Checked by AVG Free Edition.  
Version: 7.1.412 / Virus Database: 268.18.3/699 - Release Date: 2/23/2007

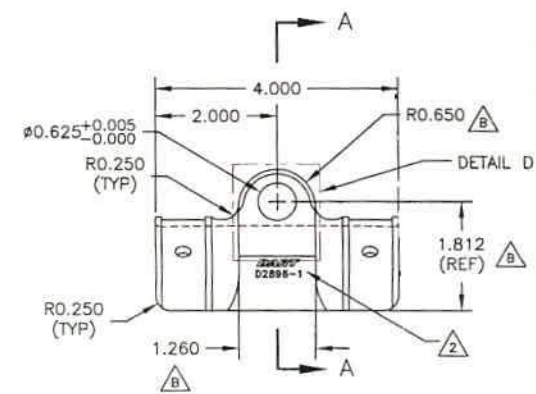
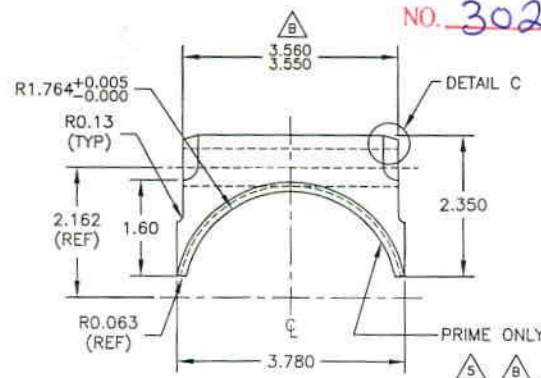
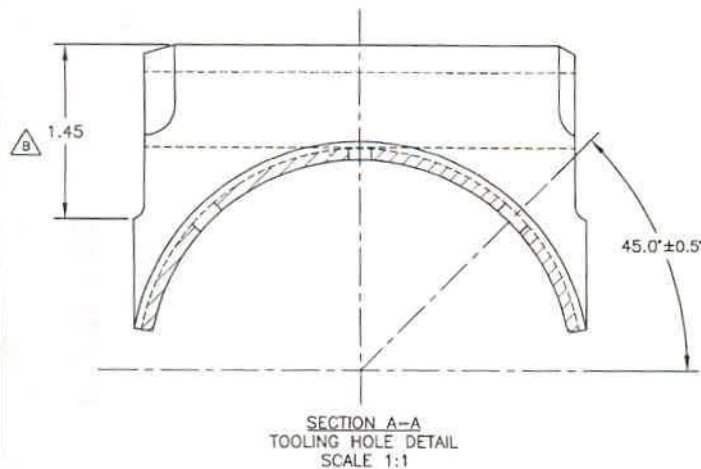
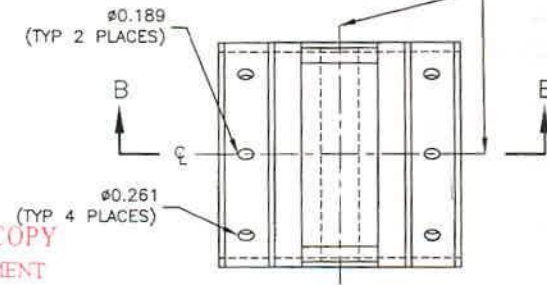
--  
No virus found in this outgoing message.  
Checked by AVG Free Edition.  
Version: 7.1.412 / Virus Database: 268.18.3/699 - Release Date: 2/23/2007





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67.04.12 4P  
PER BN 946

HOLES WITHIN 0.005 OVER ENTIRE LENGTH



D2896-1

- 1) MATERIAL: 17-4 PH STAINLESS STEEL  
HEAT TREAT TO H900 CONDITION  
(900°F FOR 1 HR, AIR COOL)  
MIN UTS = 170 KSI (38 HRC)
- 2) IDENTIFY WITH DART LOGO AND PART NUMBER IN THIS AREA  
WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP
- 3) BREAK ALL UNMARKED SHARP EDGES 0.010 TO 0.020
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) FINISH: POWDER COAT WHITE (REF 4.3.5.2) PER DART QSI 005 4.3  
PRIME INSIDE SURFACE AS SHOWN PER DART QSI 005 4.2
- 6) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 7) ALL DIMENSIONS ARE IN INCHES

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B	07.03.19	INCORP. A1-A4, FINISHING NOTES
A	01.10.19	NEW ISSUE
DESIGN	4P	DRAWN BY AH
CHECKED	4P	APPROVED 4P
DATE	07.03.19	TITLE
		SUPPORT
		DART AEROSPACE LTD. WARRICKBURT, ONTARIO, CANADA
		DRAWING NO. D2896
		REV. B
		SHEET 1 OF 1
		SCALE
		1:2